

FIG. 1

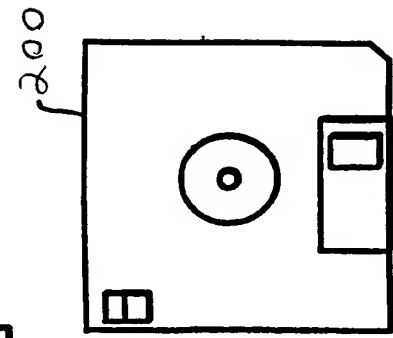


FIG. 2

```
<PurchaseOrder>
  <Buyer>
    <Name>John Smith</Name>
  </Buyer>
  <LineItems>
    <Item>
      <Name>ThinkPad T20</Name>
      <Description>
        This laptop is the <Bold>best value</Bold> in its class
      </Description>
      <:Price>$1999</Price>
    </Item>
    <Item>
      <Name>NetVista Desktop</Name>
      <:Price>$999</Price>
    </Item>
  </LineItems>
</PurchaseOrder>
```

Figure 3

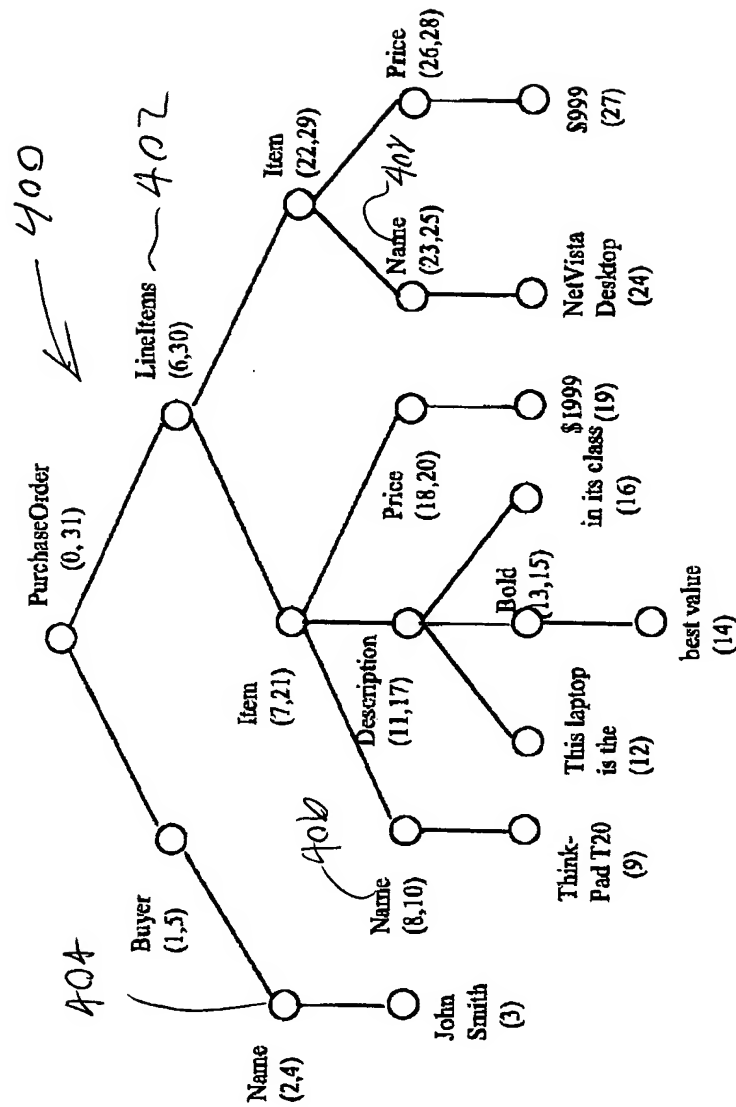
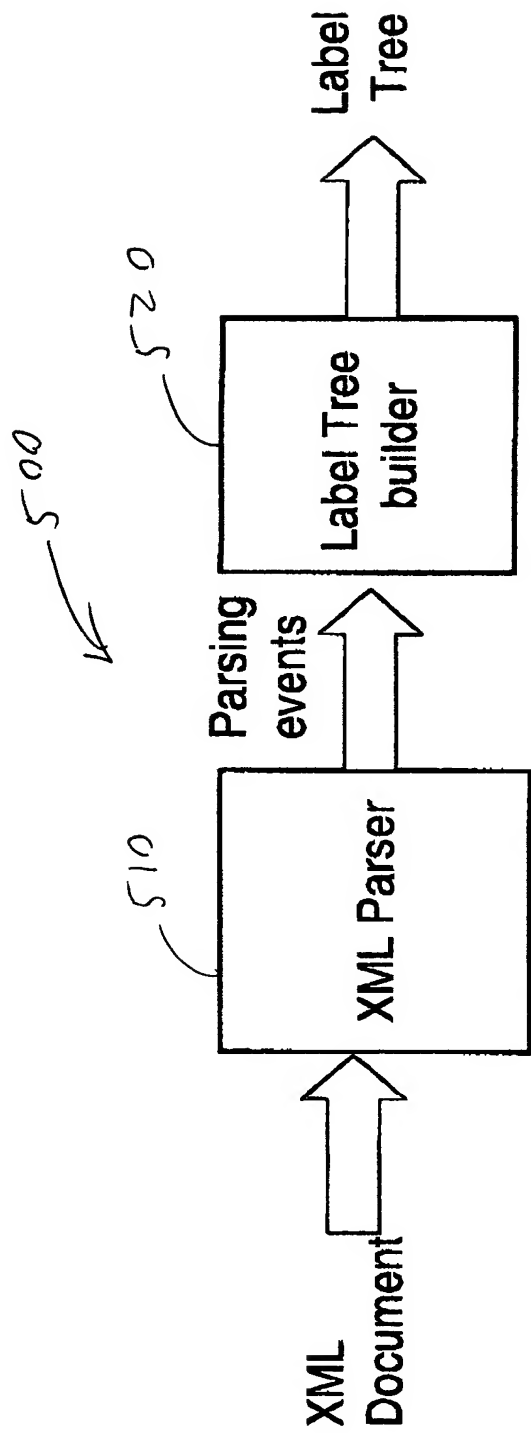


FIG. 4



Building the label tree in bulk-loading mode

FIG. 5

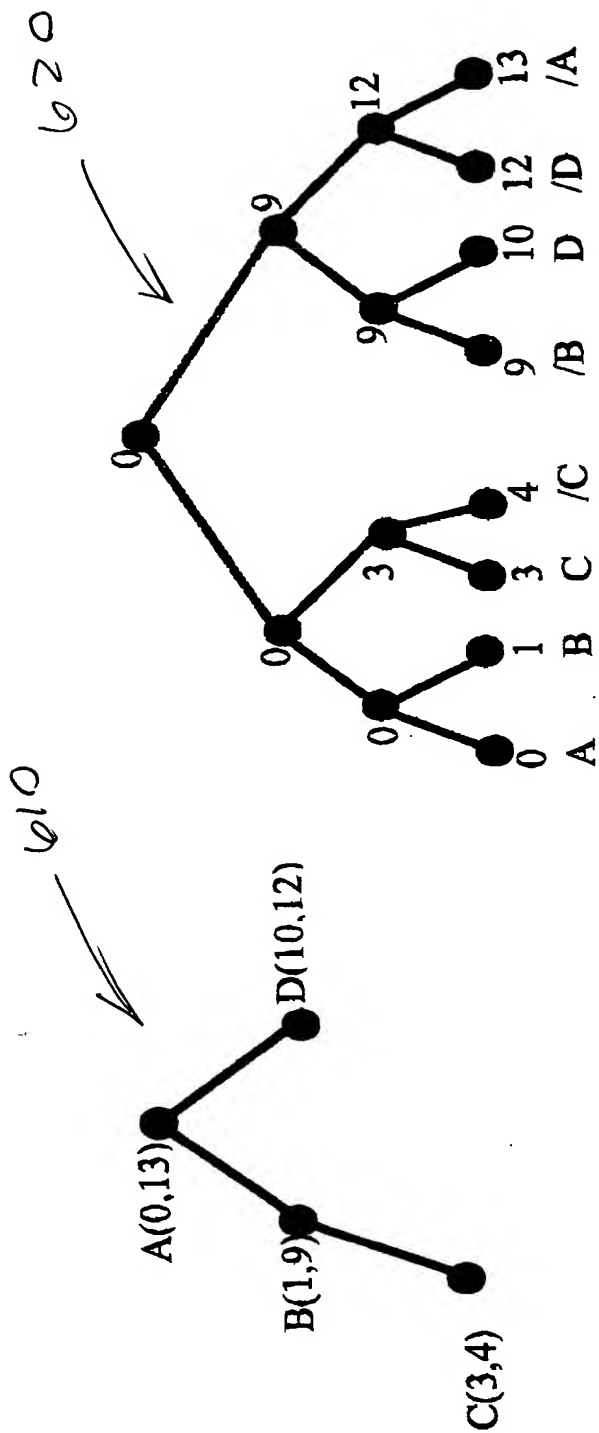
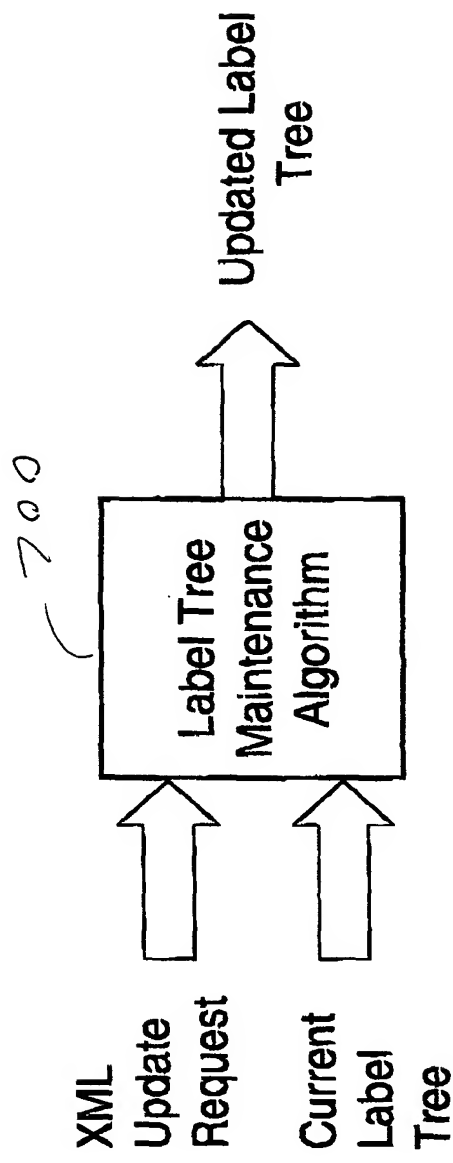


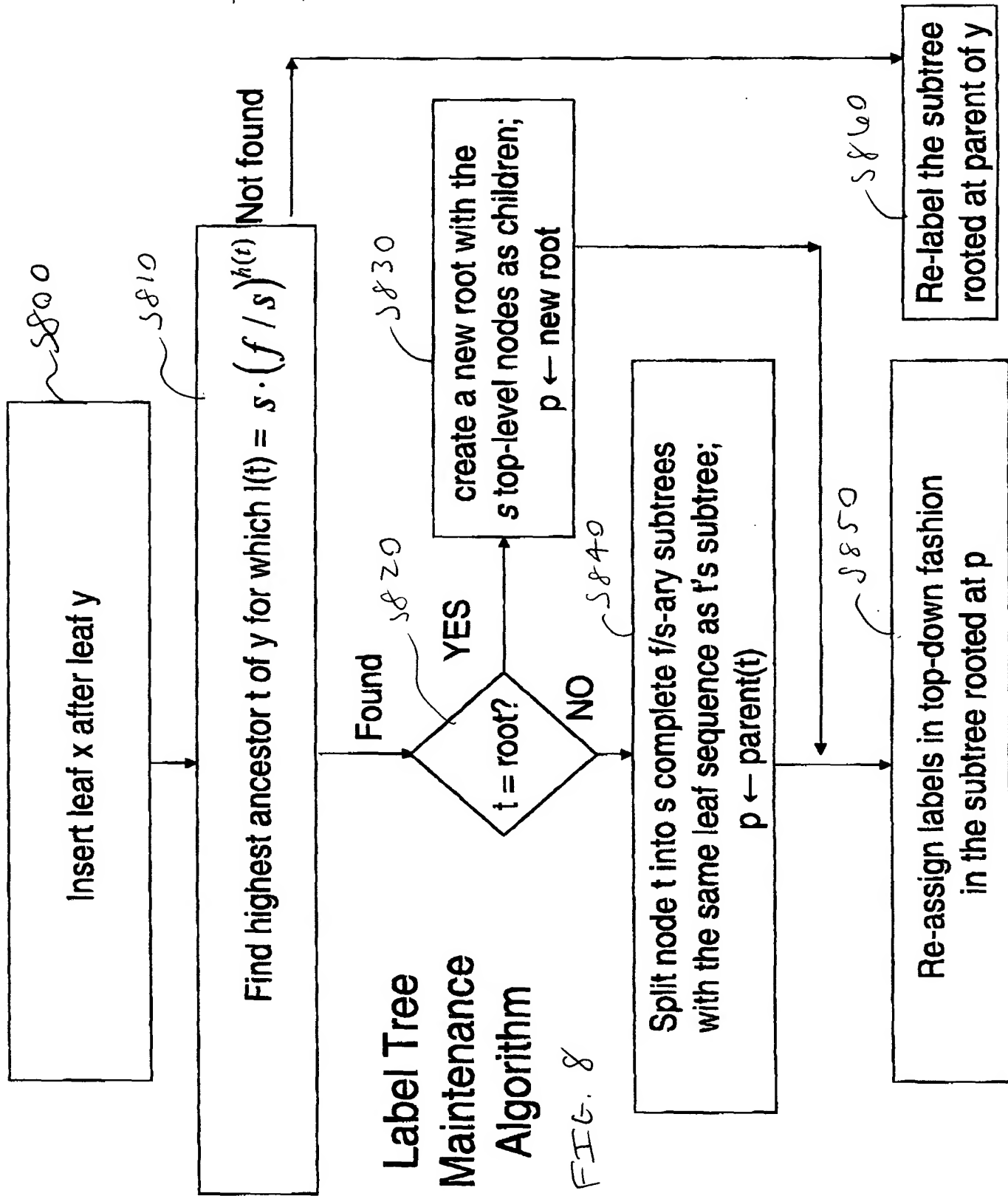
FIG. 6B

FIG. 6A



Maintaining the label tree in response to updates

FIG. 7



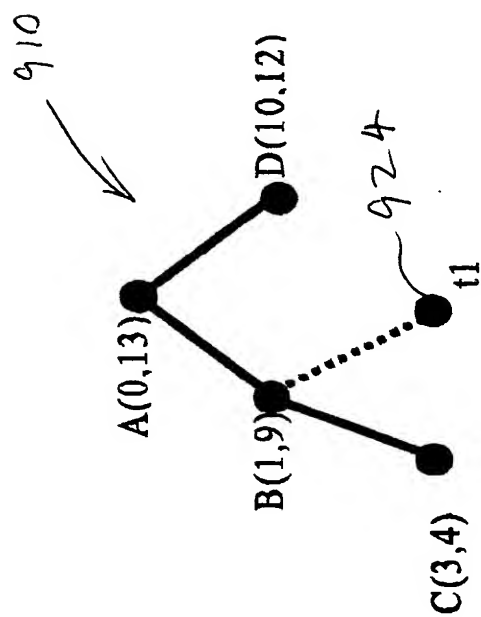


FIG 9A

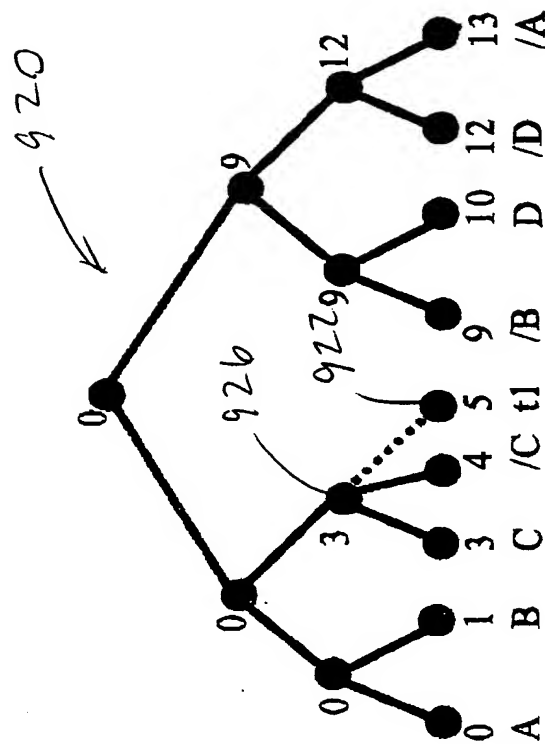
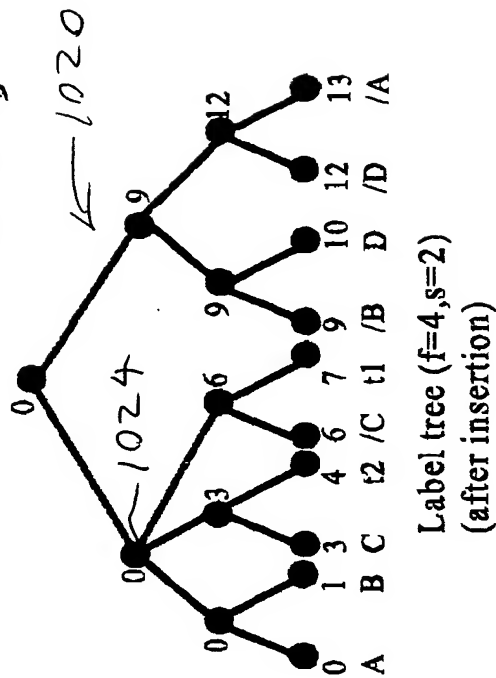
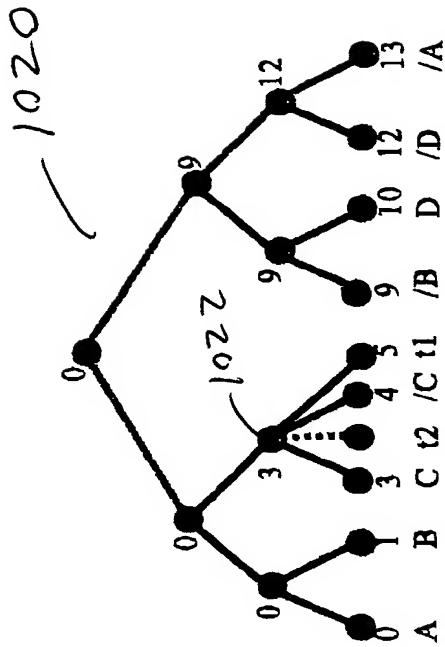
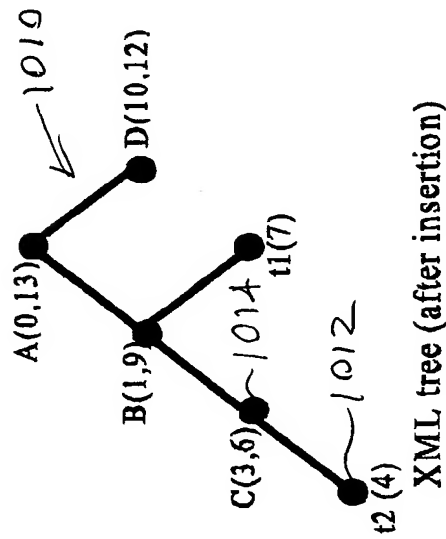
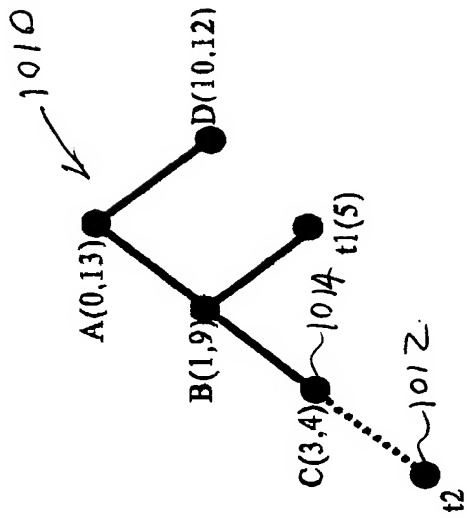


FIG 9B



Amortized cost upper bound
($f=4, s=2$)

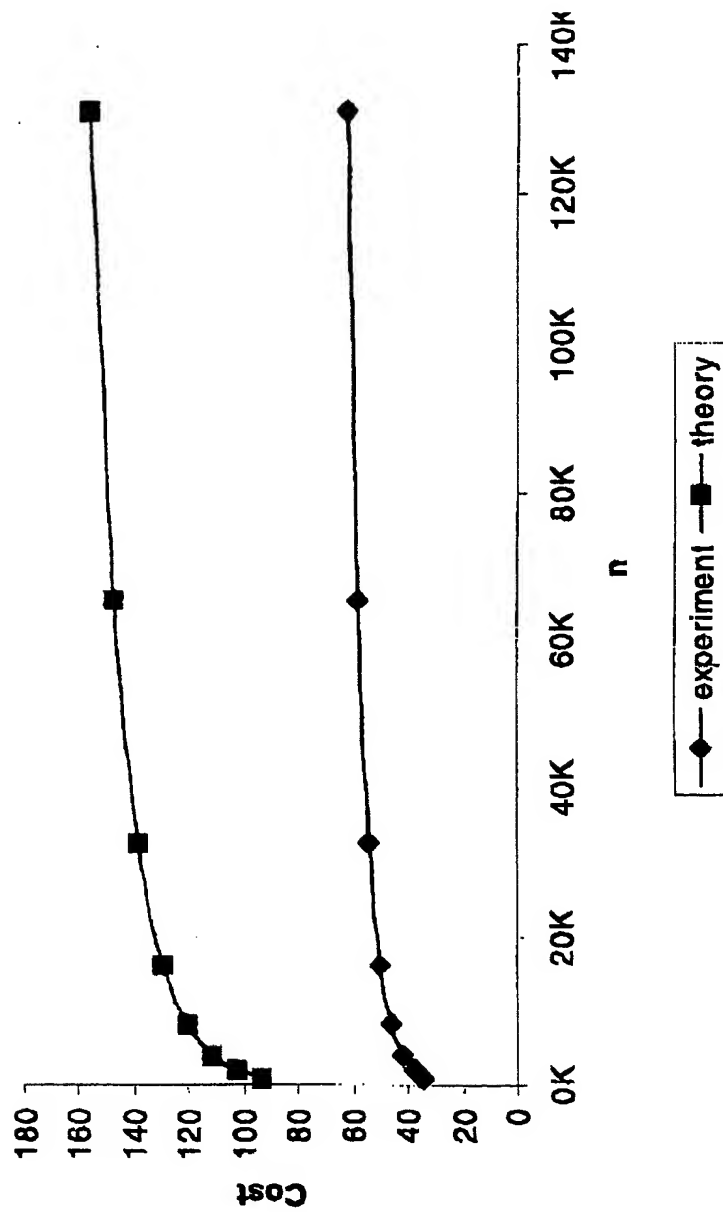


Fig. 11

Amortized cost by varying f
 $(n=2^{15}, s=4)$

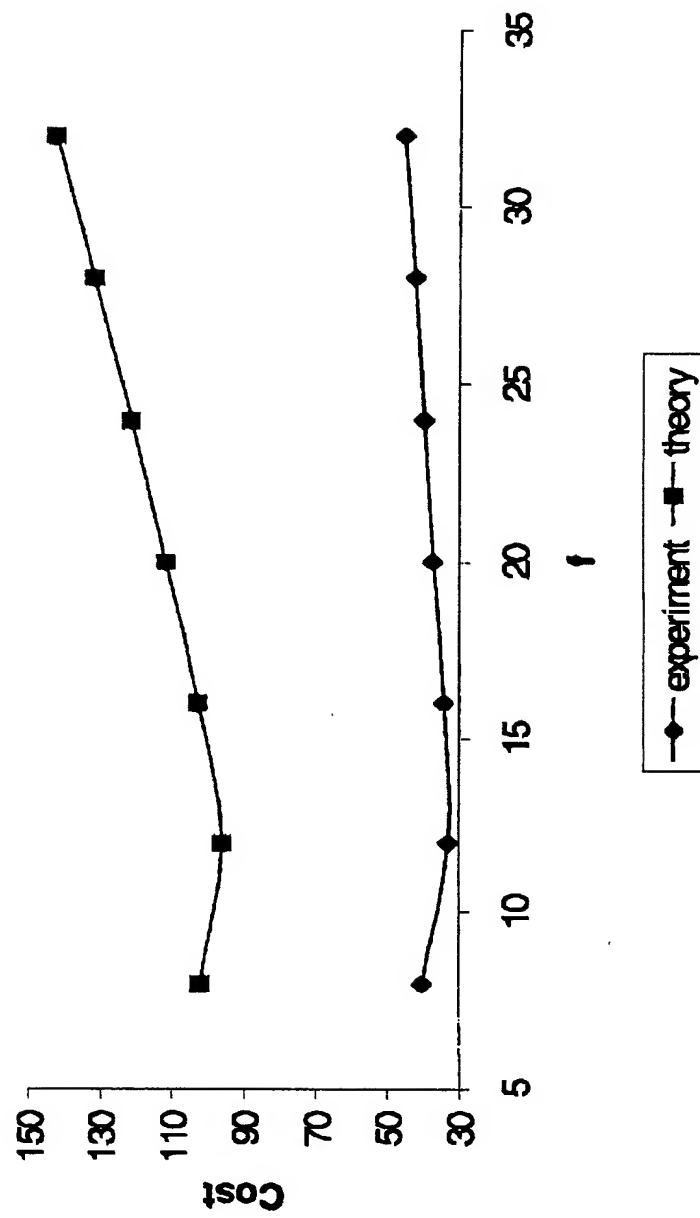


Fig. 12

Amortized cost by varying s
 $(n=2^{15}, f=36)$

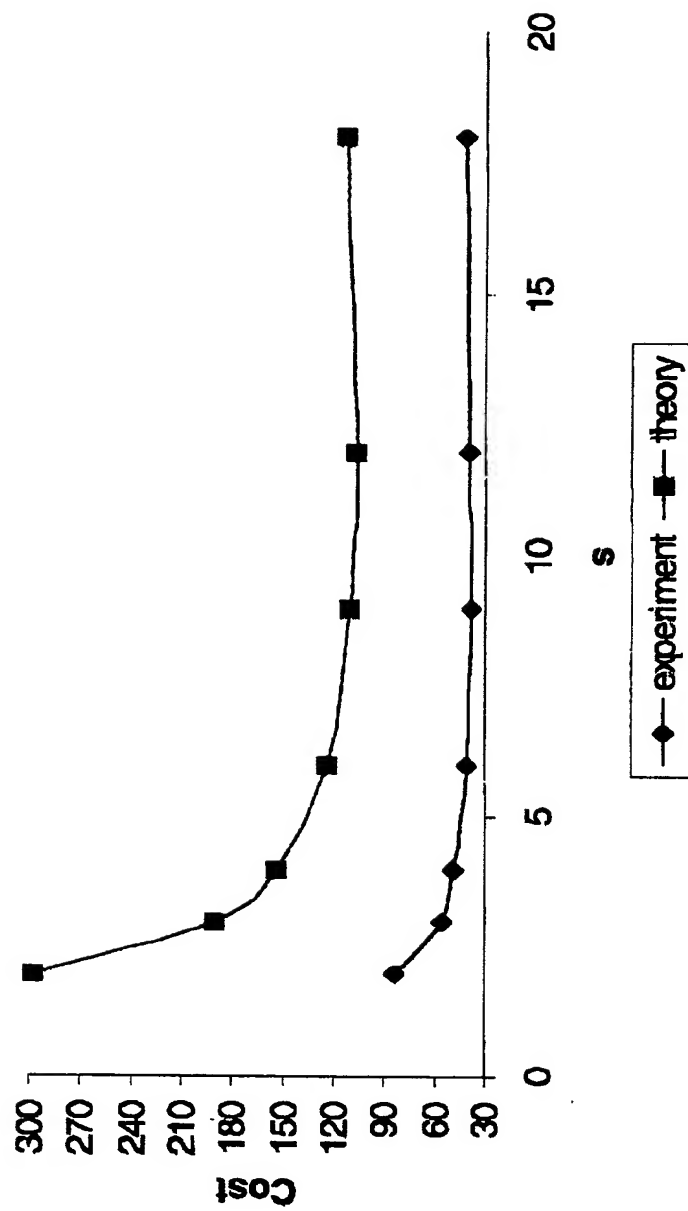


FIG. 13

**Optimal cost constrained on bits used
($n=2^{15}$)**

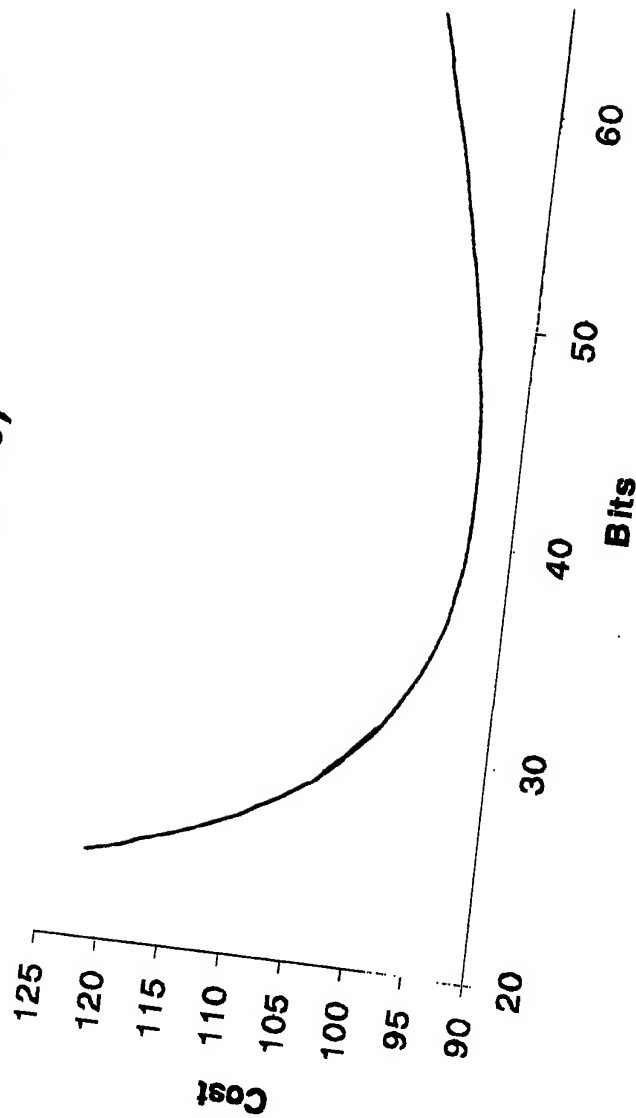


FIG. 14